

B. Amendments to the claims

1. (Currently Amended) A method of producing nanostructured $\text{Li}_4\text{Ti}_5\text{O}_{12}$ particles, comprising the following steps:

- a) dissolving a lithium containing salt in an organic solvent to form a liquid solution,
- b) adding a dispersion of nanoparticles of TiO_2 to the liquid solution, said TiO_2 nanoparticles having an average primary particle size of less than 100 nm;
- c) heating the liquid solution to facilitate diffusion of lithium ions into the nanoparticles;
- d) separating the solids from the liquid solution; and
- e) heat treating the solids to form a crystal structure, wherein the crystals are up to less than 100 nm in size.

2. (Original) The method as claimed in Claim 1, wherein lithium salt is selected from the group consisting of: lithium nitrate, lithium hydroxide, lithium carbonate, lithium chloride, lithium acetate and lithium iodide.

3. (Original) The method as claimed in Claim 1, wherein the organic solvent has a boiling point in the range of 79 – 250° C.

4. (Original) The method as claimed in Claim 1, wherein the organic solvent has a boiling point of at least 100° C.

5. (Original) The method as claimed in Claim 1, wherein average primary particle size of

TiO₂ nanoparticles is in the range of 5 – 100 nm, and the average secondary (or aggregate) particle size is in the range of 25 – 1000 nm.

6. (Currently Amended) The method as claimed in Claim 1, wherein the heating step (c) comprises refluxing.

7. (Currently Amended) The method as claimed in Claim 1, wherein the heating step (c) comprises refluxing between 5 to 40 hrs.

8. (Currently Amended) The method as claimed in Claim 1, wherein the heating step (c) is conducted at an atmospheric pressure in the range of 0.5 to 10 atmospheres.

9. (Original) The method as claimed in Claim 1, wherein solid particles are separated from a liquid by at least one of the following methods: filtration, evaporation and centrifuging.

10. (Previously Amended) The method as claimed in Claim 1, wherein the separated solids are heat-treated at a temperature in the range of 300 - 900° C.

11. (Previously Amended) The method as claimed in Claim 1, wherein the separated solids are heat-treated at a temperature in the range of 600 - 800° C.

12. (Previously Amended) The method as claimed in Claim 1, wherein the separated solids are heat-treated for a period in the range of 1 - 24 hrs.

13. (Currently Amended) The method as claimed in Claim 1, wherein the separated solids are heat-treated for a period in the range of 2 – 8 hrs.

14. (Previously Amended) The method as claimed in Claim 1, wherein the separated solids are heat-treated in an atmosphere containing O₂.

15. (Previously Amended) The method as claimed in Claim 1, wherein separated solids are heat-treated in an atmosphere containing an inert gas.

16. (Previously Amended) The method as claimed in Claim 15, wherein the inert gas is selected from the group consisting of N₂, He and Ar.

17. (Currently Amended) Nanostructured particles of Li₄Ti₅O₁₂ having a spinel type crystal structure and composed of crystals that are less than 100 nm in size produced by the process of claim 1.

18. (Previously Amended) Nanostructured Li₄Ti₅O₁₂ particles, having a spinel type crystal structure and wherein the particles are composed of crystals that are less than 100 nm in size; the collection of particles having an average diameter of less than about 300 nm.

19. (Original) The nanostructured Li₄Ti₅O₁₂ particles in Claim 18, wherein the particles are composed of nano-sized crystals that are between 20 – 100 nm in size.